In the Claims

CLAIMS

Claims 1-50 (cancelled).

Claim 51 (new): A method comprising:

providing a curable adhesive composition including a conductive epoxy;

providing a thin profile battery and a substrate to which the thin profile battery is to be conductively coupled;

providing a dipole antenna on the substrate;

interposing the curable adhesive composition between the thin profile battery and the substrate;

mounting an RFID integrated circuit to the substrate;

coupling the RFID integrated circuit to the antenna and to the battery; and

curing the adhesive into an electrically conductive bond electrically interconnecting the battery and the substrate.

Claim 52 (new): The method of claim 51 wherein the epoxy terminated silane comprises a glycidoxy methoxy silane.

Claim 53 (new): The method of claim 51 wherein the epoxy terminated silane comprises a glycidoxyproplytrimethoxysilane.

Claim 54 (new): The method of claim 51 wherein the thin profile battery comprises an outer nickel clad stainless steel surface over which the curable adhesive composition is received.

Claim 55 (new): The method of claim 51 wherein the thin profile battery is a button type battery having a terminal housing member comprising an outer nickel clad stainless steel surface over which the curable adhesive composition is received.

Claim 56 (new): The method of claim 51 wherein the thin profile battery is a button type battery having a terminal housing member comprising an outer nickel clad stainless steel surface over which the curable adhesive composition is received, and wherein the substrate comprises conductive printed thick film ink over which the curable adhesive composition is received.

Claim 57 (new): The method of claim 51 wherein the thin profile battery is a button type battery having a terminal housing member comprising an outer nickel clad stainless steel surface over which the curable adhesive composition is received, and the substrate comprises conductive printed thick film ink over which the curable adhesive composition is received.

Claim 58 (new): A method of conductively interconnecting electronic components:

providing a flexible substrate;

disposing a flexible conductive path on the flexible substrate;

supporting an RFID integrated circuit from the substrate, coupled to the flexible conductive path;

providing a curable adhesive composition including an epoxy configured to be conductive at least after being cured;

providing a thin profile battery to be conductively connected with the flexible conductive path;

interposing the curable adhesive composition between the battery and the flexible conductive path; and

curing the adhesive into an electrically conductive bond electrically coupling the battery to the flexible conductive path.

Claim 59 (new): The method of claim 58 wherein the battery comprises a nickel containing metal surface over which the curable adhesive composition is received.

Claim 60 (new): The method of claim 58 and comprising printing the flexible conductive path onto the substrate.

Claim 61 (new): A method of conductively interconnecting electronic components:

printing at least one conductive path on a flexible substrate;

electrically coupling a radio frequency communications device to the conductive path;

applying a curable adhesive, including an epoxy configured to be conductive at least after being cured, to at least one of the printed conductive path and a terminal of a battery and;

engaging the terminal of the battery with the conductive path; and

curing the adhesive into an electrically conductive bond electrically coupling the terminal of the battery to the printed conductive path.

Claim 62 (new): The method of claim 61 wherein the battery is a thin profile battery.

Claim 63 (new): The method of claim 61 wherein the adhesive both supports the battery from the substrate and couples the terminal of the battery to the conductive path.

Claim 64 (new): The method of claim 63 wherein printing a conductive path comprises using printed thick film.

Claim 65 (new): A radio frequency communication device comprising:

a flexible substrate;

a dipole antenna;

a flexible conductive path disposed on the substrate, the conductive path including a first portion and a second portion;

an RFID integrated circuit mounted to the substrate and electrically coupled to the first portion of the substrate conductive path and to the antenna using a conductive adhesive, the integrated circuit including a processor, a modulated backscatter transmitter coupled to the processor, a receiver coupled to the processor, and a wake-up circuit coupled to the receiver and configured to selectively activate the receiver; and

a thin profile battery conductively bonded with a second portion of the substrate conductive path by a conductive adhesive.

Claim 66 (new): The device of claim 65 wherein the wake-up circuit is coupled to the processor and is configured to determine when a valid command is being received and to supply electrical power from the battery to the processor in response thereto.

Claim 67 (new): The device of claim 65 wherein the integrated circuit includes a frequency lock loop configured to supply clock signals to the receiver and transmitter, the frequency lock loop including a current source having a thermal voltage generator, and a current controlled oscillator having a plurality of selectively engageable current mirrors multiplying up the current of the current source.

Claim 68 (new): A radio frequency communication device comprising:

a flexible substrate;

a dipole antenna disposed on the substrate;

flexible conductive paths disposed on the substrate, the conductive paths including a first portion and a second portion;

a RFID integrated circuit mounted to the substrate and electrically coupled to the first portion of the substrate conductive paths and to the antenna; and

a thin profile battery conductively bonded with a second portion of the substrate conductive paths by a conductive adhesive.

Claim 69 (new): The device of claim 68 wherein the integrated circuit includes a processor, a transmitter coupled to the processor, and a receiver coupled to the processor.

Claim 70 (new): The device of claim 68 wherein the integrated circuit includes a processor, a modulated backscatter transmitter coupled to the processor, and a receiver coupled to the processor.

Claim 71 (new): The device of claim 70 wherein the integrated circuit includes a wake-up circuit configured to selectively activate the receiver.

Claim 72 (new): The device of claim 70 wherein the integrated circuit includes a wake-up circuit configured to periodically activate the receiver, the wake-up circuit being coupled to the receiver and the processor and periodically waking the receiver, the wake-up circuit being configured to determine when a valid command is being received and to supply electrical power from the battery to the processor in response thereto.

Claim 73 (new): The device of claim 70 wherein the integrated circuit includes a frequency lock loop configured to supply clock signals to the receiver and transmitter, the frequency lock loop including a current source having a thermal voltage generator, and a current controlled oscillator having a plurality of selectively engageable current mirrors multiplying up the current of the current source.

Claim 74 (new): The device of claim 68 wherein the integrated circuit includes a microprocessor, a receiver configured to receive radio frequency commands from an interrogation device and having an output coupled to the microprocessor, a transmitter configured to transmit a signal identifying the device to the interrogator in response to a command from the microprocessor, and a wake-up timer circuit coupled to the receiver and configured to determine if a signal received by the receiver is a radio frequency command from the interrogation device, the integrated circuit at times switching between a sleep mode and a receiver-on mode, more power being consumed in the receiver-ón mode than in the sleep mode, the integrated circuit switching from the receiver-on mode to a microprocessor-on mode in response to receiving a signal indicating that a communication received by the receiver is a radio frequency command from the interrogation device.

Claim 75 (new): The device of claim 68 wherein the antenna is a dipole antenna having first and second portions which define, in operation, first and second poles of the dipole antenna, respectively, and wherein the integrated circuit includes a transmitter and a receiver, the transmitter being switchable between a backscatter mode, wherein a carrier for the transmitter is derived from a carrier received from an interrogator and the integrated circuit alternately reflects or does not reflect the carrier from the interrogator by shorting or isolating the first and second portions of the dipole antenna to transmit data to the interrogator, and an active mode, wherein a carrier for the transmitter is generated by the integrated circuit itself, the transmitter being configured to switch between the backscatter and active modes in response to a radio frequency command received by the receiver.

Claim 76 (new): The device of claim 68 wherein the antenna is a dipole antenna having first and second portions which define, in operation, first and second poles of the dipole antenna, respectively, and wherein the integrated circuit includes a transmitter and a receiver, the transmitter selectively transmitting a signal using a modulation scheme, the transmitter being capable of transmitting using modulated backscatter modulation and also capable of transmitting using any of the following active modes: Frequency Shift Keying (FSK), Binary Phase Shift Keying (BPSK), Direct Sequence Spread Spectrum, On-Off Keying (OOK), Amplitude Modulation (AM).

Claim 77 (new): The device of claim 68 wherein the antenna is printed onto the substrate.